

REMARKS

Claims 1-19 are pending in the application, with claims 7-13 having been withdrawn from consideration and claims 14-19 being newly added.

Several claims have been amended in order to more particularly point out, and distinctly claim the subject matter to which the applicant regards as his invention. It is believed that this Amendment is fully responsive to the Office Action dated **March 13, 2003**.

Objections to the Claims

Claims 3-5 are objected to because of minor informalities. Relevant claims have been amended, as needed, to overcome this objection. Reconsideration and withdrawal of this objection are respectfully requested.

Claim Rejections under 35 USC §102

Claims 1-2 and 6 are rejected under 35 USC §102(b) as being anticipated by Itaya et al. (U.S. Patent No. 5,780,873).

Claim Rejections under 35 USC §103

Claims 3-5 are rejected under 35 USC §103(a) as being unpatentable over Itaya et al. (U.S. Patent No. 5,780,873) in view of Piprek et al.

Claim 6 is rejected under 35 USC §103(a) as being unpatentable over Itaya et al. (U.S. Patent No. 5,780,873).

Itaya et al. discloses a light emitting device forming an amorphous layer of 10 nm thickness between GaN and GaAs substrates, each of which has a different lattice constant and they are bonded to each other. However, Itaya et al. merely asserts that the substrate has an electric conductivity. ←
Though the electric conductivity is found on the bonded interface structure, it is not disclosed whether the electric conductivity has an electrical conductive characteristic that is linear, nonlinear, or otherwise.

On the other hand, Piprek et al. discloses a bonded structure of InP and GaAs but it is of a steep interface structure. Piprel et al. describes that the influence of the bonded interface appears on a current-voltage characteristic, that is, the electrical conductive characteristic is nonlinear.

One object of the present invention is to provide a bonded structure having a linear current-voltage characteristic suitable for a device application, and its effect is clearly disclosed using GaAs and InP. There is a formation of the amorphous layer and the linear current-voltage characteristic. The relationship between the amorphous layer and the linear current-voltage characteristic is based on experimental results of GaAs and InP.

Since the amorphous layer structure of Itaya et al. is made of Ga, N, and As, the features in claim 1 of the present invention, as newly amended, is not disclosed. Furthermore, in the structure of Itaya et al., it merely discloses a characteristic of being able to flow electricity. The linear current-voltage characteristic, which is the object of the present invention, is neither disclosed nor suggested.

On the other hand, the device shown by Piprek et al., which bonded the InP substrate and the GaAs substrate, merely discloses that a nonlinear characteristic appears at the steep interface that is not amorphous.

Accordingly, even if Itaya et al. and Piprek et al. are combined, the effect disclosed in the present invention to obtain the linear current-voltage characteristic by bonding two substrates (for example, GaAs and InP) will not result.

Therefore, the claims as newly amended are not anticipated or rendered obvious by the asserted prior art references. Reconsideration and withdrawal of these rejections are respectfully requested.

Conclusion

In view of the aforementioned amendments and accompanying remarks, all pending claims are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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